

EDGE X FOUNDRY™

# TSC Meeting

May 17th, 2023

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# Meeting Logistics

Time: Wednesdays 8am PDT – 9am PDT (Alternate Weeks)

Join from PC, Mac, Linux, iOS or Android: <https://zoom.us/j/983155298>

Or iPhone one-tap (US Toll): +14086380968,983155298# or +16465588656,983155298#

Or Telephone:

Dial: +1 408 638 0968 (US Toll) or +1 646 558 8656 (US Toll)

+1 855 880 1246 (US Toll Free)

+1 877 369 0926 (US Toll Free)

Meeting ID: 983 155 298

International numbers available: <https://zoom.us/join?m=mkFexUxEcqHlvXHw53PqScTDRvS48PiQ>

\*\* TSC calls are recorded and added to Wiki post-call



# TSC – Members Present Today

<u>Company</u>	<u>Name</u>	<u>Email</u>	<u>Position</u>
IOTech	Iain Anderson	<a href="mailto:iain@iotechsys.com">iain@iotechsys.com</a>	Device Services WG Chair
Intel	Ernesto Ojeda	<a href="mailto:ernesto.ojeda@intel.com">ernesto.ojeda@intel.com</a>	Dev Ops WG Chair
Intel	Bryon Nevis	<a href="mailto:bryon.nevis@intel.com">bryon.nevis@intel.com</a>	Security WG Chair
Intel	Lenny Goodell	<a href="mailto:leonard.goodell@intel.com">leonard.goodell@intel.com</a>	Applications & Analytics WG Chair
IOTech	Cloud Tsai	<a href="mailto:cloud@iotechsys.com">cloud@iotechsys.com</a>	Core & Test/QA WG Chair

## At Large Members:

Gavin Lu (VMWare), Farshid Tavakolizadeh (Canonical), Melvin Sun (Intel), James Butcher (IOTech), Tom Brennan (Eaton)

Current quorum = 6 members

*Note: Quorum for TSC meetings requires at least fifty percent of all voting members of the TSC to be present. The TSC may continue to meet if quorum is not met, but will be prevented from making any decisions at the meeting. Except as provided in Section 7.c. and 8.a, decisions by vote at a meeting require a majority vote of those in attendance, provided quorum is met. Decisions made by electronic vote without a meeting require a majority vote of all voting members of the TSC.*



# Today's Agenda

- EdgeX Awards Reminder
- Working Group Updates
- UCR & ADR Updates
- Doc Updates
- Miscellaneous
  - NanoMQ
  - TSC membership for next cycle





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## Work Group Updates

Chairs

# EdgeX Awards

- EdgeX awards have run each year since 2018 and again this year
- <https://wiki.edgexfoundry.org/display/FA/EdgeX+Awards>
- Planned Timeline:
  - Open nominations by the EdgeX Community: **May 2nd - May 19th**
  - Voting by the EdgeX Technical Steering Committee: **May 22nd - May 31st**
  - Winners announced: **June 5th**
- Nominations are now live: <https://forms.gle/uqCybgGSmdLzskcR6>
- Get any remaining nominations in before May 19th deadline





# Working Group Chair Updates

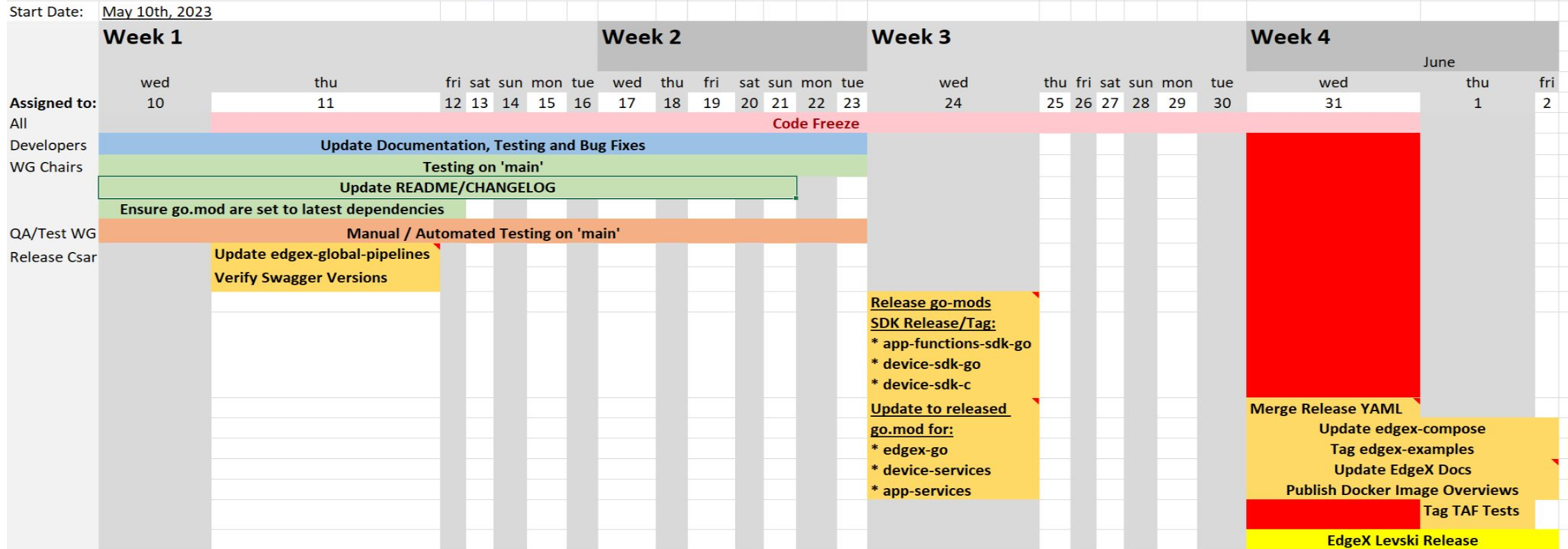
- Around the table:
  - Release Czar - Bill Mahoney
  - Product Manager - Lenny Goodell
  - Applications - Lenny Goodell
  - Core - Cloud Tsai
  - Device Services - Iain Anderson
  - DevOps - Ernesto Ojeda
  - Security - Bryon Nevis
  - PRC Updates - Melvin Sun and Gavin Lu
  - Outreach and Marketing
    - Certification - Rodney Hess
    - LF Edge TAC - Jim White





# Release Czar (2023-5-17)

## Minnesota Release / 3.0.0



- Testing Status (TAF / Manual)
- README updates

EdgeX Release Process: <https://wiki.edgexfoundry.org/display/FA/Release+Checklist>



# Product Manager (05/17/23) - Minnesota

[Cross Cutting Issues](#)

## Icebox (1)

- Lite Builds (no security features) via Build Tags

## Backlog (1, -1)

- URIs for Files Implementation (roll to Napa)

## In Progress (2, -1/+1)

- **Add main branch Warning to all Repos**
  - edgex-go - **DONE**
  - ASC - **DONE**
  - App LLRP - **DONE**
  - Device Rest - **DONE**
  - Device Virtual - **DONE**
  - Device Onvif Camera - **DONE**
  - Device Modbus - **DONE**
  - Remain Device Services - TBD
- **Common Config**
  - C SDK/Services - TBD (Napa)
  - **Defect with removing map entries in Writable**
    - **Must restart service**

## Done (16, +1)

- V3 Go Mods
- Remove ZMQ
- Flattening of consul
- Get Command Parameter type
- Consistent Command-line options and Override names
- MessageBus Config refactoring
- Remove old metrics collection
- Go 1.20
- MessageBus Request API
- Consistent MessageBus Topic wildcards
- Topics as constants and Add service name to multi-level topic when publishing Events
- Microservice Auth
- Remove use of TOML package
- Secret Path => SecretName refactoring
- V3 Rest API version bumps
- **Switch to YAML for config files**
  - **C Device SDK/Service - DONE**

Last minute bootstrap enhancement PR. **TSC approval needed**

<https://github.com/edgexfoundry/go-mod-bootstrap/pull/542>

Needed in Camera Device services to simplify scripts and documentation.

Narrowly scoped to InsecureSecretProvider, so low risk.



# Applications WG Update (05/17/23) - Minnesota

## Newly Completed (5+)

- Ignore all go-mod deps
  - SDK - except go-mod-bootstrap
  - ASC & LLRP – except SDK
- refactor!: Rename MakeltRun and MakeltStop APIs to Run and Stop
  - Consumed by ASC and LLRP
  - Documented
- Document new RemoveAllPipelines API
- Upgrade App Service Examples to V3 (all except Camera Mgmt)
- Add main branch Warnings (ASC and LLRP)

## Newly added (0)

- 

## WIP (2)

- Camera Mgmt Example - Auto start EVAM on new camera devices#122
- App Services V3 Migration Guide

## Done for Minnesota (99, +11)

### Backlog (1) <https://github.com/orgs/edgexfoundry/projects/50/views/2>

- Implement Record And Replay ADR (Roll or to Napa)

### ICE BOX (9)

#### Next

- More Documentation/Examples and Tests
- Topics for Napa Planning

## eKuiper

- Working on 1.10
  - Released 1.10.0-alpha.1
    - <https://github.com/lf-edge/ekuiper/releases/tag/1.10.0-alpha.1>
  - Planning on Code freeze today
  - Planning to release next week on 24<sup>th</sup> or 25<sup>th</sup> after we release our go-mods

**Project Board:** <https://github.com/orgs/edgexfoundry/projects/50/views/2>



# Application Services - Minnesota

## Functions (built into SDK)

- Add Tags
- Batch
- Compression (GZIP & ZLIB )
- Conversion (XML & JSON)
- PushToCore **\*\* DEPRECATED\*\***
- **EventWrapper - NEW**
- Encryption (AES256)
- Encryption (AES) **\*\* DEPRECATED\*\***
- Export
  - MQTT
  - HTTP POST & PUT
- Filtering
  - By Profile Name
  - By Device Name
  - By Source Name
  - By Resource Name
- JSONLogic
- Set Response Data
- **ToLineProtocol (transforms Metric DTO) - NEW**

## Features

- Store and Forward
- Batch and Send
- Web Server
- Configurable App Service
- Vault Integration for Secrets
- MQTT Event triggers
- Filter by Topics
- Custom Triggers
- Publish Topics and URL Placeholders
- Structure Custom Configuration
- Background Publishing
- Received Topic
- Context Storage
- Service Metrics - **NEW**
- Clients
  - Logging, Event
  - Command
  - Device, DeviceService
  - DeviceProfile
  - Notification
  - Subscription
  - Registry

## Reference/Example App Services

(built on top of SDK)

### Released Services

- App Service Configurable
- App RFID LLRP Inventory

### Examples

- Simple Filter
- Simple Filter and MQTT Export
- Simple Filter and HTTP Export
- Simple CBOR
- Cloud Export

- Cloud Event Transformation
- Secret Retrieval
- JsonLogic
- Send Command
- Convert & Publish
- Custom Target Type
- IBM Watson IoT (ASC Profile)
- Custom Trigger
- Influx DB & Flege Exports
- Camera Management - **NEW**



# Core WG Update (17 May 2023)

- TAF:
  - Functional tests:
    - Non-Security **593** tests - All pass / Security **594** tests - All pass
  - Integration tests:
    - Non-Security **113** tests - All pass / Security **114** tests - All pass
  - Performance tests:
    - Non-Security **10** tests - All pass / Security **10** tests - All pass
- QA Progress
  - All the automation tests are passed
- Core Progress
  - Documentation is ongoing
  - Merged the edgex-ui-go PR for the major implementation of v3 API
  - Discussed with the Thundersoft team in email about fixing the Command query parameter change in v3- they are going to open another PR.



# Device Services WG Update (17 May 2023)

## **v3 status:**

- device-coap not yet updated (PR)
- Some low-priority fixes/enhancements pushed back to 3.1
- Documentation work TBD
- edgex-examples - currently no example for C, Go requires update

## **UART DS for 2.3:**

- Inadvertently moved to lf-edge

*Next meeting: May 22nd*

Reminder: May 29 is Memorial Day in US



# Device Services - current/coming (as of v3.0)

## Open Source connectors (Current):

- Modbus (TCP/RTU) in Go
- Virtual Device in Go
- SNMP in Go
- MQTT in Go
- BACnet (IP & MSTP) in C
- ONVIF and USB Cameras in Go
- REST in Go
- CoAP in C
- LLRP / RFID in Go
- GPIO in Go

## Open Source connectors (Future):

- UART in Go

## Commercial connectors (Current):

- BLE in C
- Zigbee in C
- GPS in C
- CAN in C
- CANOpen in C
- MEMS in C
- EtherCat in C
- EtherNet/IP in C
- PROFINET in C
- OPC-UA in C
- OPC-UA Pub/Sub in C
- Siemens S7 in C
- File reader in C
- WebSockets in Go

There are additional commercial MQTT (Go), Modbus (C), REST (Go), and BACnet (in C) that have added features over the community editions





# DevOps WG Update (5/17/2023)

## Pipeline Related

- [#428](#) [Complete] edgex-docs investigate htmlproofer issues
  - Issue causing PR failures was related to Connection Refused errors connecting to a few hosts
  - Issue identified as an upstream issue from ISP.
  - [PR #1019](#) has been merged to enable htmlproofer again
- [#423](#) [Complete] POC Simple GitHub Actions and Simple Reusable workflow for Go builds
  - Initial Demo done April, 11th. Next demo will show a more complete example.
  - Plan will be presented next WG meeting on next steps
- [#424](#) [Complete] Harden release process to avoid release failures with parallelized builds

## Other

- N/A

Next DevOps WG Meeting: Tuesday, July 11, 2023 @ 9AM PST



# Security WG Update

Next Meeting: [5/17 \(today\)](#)

- OpenZiti demo - Zero trust with eKuiper
- 

## Security Project Board Status

- 0 New Issues (-1)
- 1 Release Backlog (+1)
- 2 In Progress/QA (-1)
- 0 In review (-1)
- 76 Done (+3)

## Helm Chart - Board Status

- 15 To do (-1)
- 0 In progress (0)
- 0 In review (0)
- 18 Done (+2)



# Outreach Update (5/16/23)

## Social Media & Website

- We reviewed current analytics in the Outreach meeting on Monday.
- Some observations:
  - LinkedIn has better attention than Twitter (by about 3 fold)
  - Best results come from product announcements, real use cases, announcing something of value, and quick polls
- LF Edge Website update of projects still forthcoming

## Project Outreach

- Eaton use case going through legal review

## Events

- Intel Student Hackathon - ongoing; now through June (possibly early July)
  - Teams in UK, US, China.
  - Development around Matter device service
  - See <https://edgex-hackathon.com/>

## Ready/Certification

- No updates

Next meeting: June 19th @ 10am PDT



# EdgeX China Update (5/16/23)

EdgeX China community channels:

- Website: <https://cn.edgexfoundry.org/>
- OSChina: <https://www.oschina.net/group/edgex-foundry>
- CSDN: <https://blog.csdn.net/edgexfoundry>
- Zhihu: <https://www.zhihu.com/people/edgex-foundry>
- Bilibili: <https://space.bilibili.com/550595847>

- Intel EdgeX Coding Competition is underway
  - ~ 95 participants signed up (per Dan Brooks @ Intel)
  - 10 teams applied in China; 8 accepted (per Melvin Sun @Intel)
  - Coding starts this week and goes through July
  - Finals and Roadshow: July
  - Announcement of winners: July
  - Eventornado tool used for answering questions (contact James/Jim if you'd like to be involved)
- Upcoming events in China
  - EdgeX booth on GOTC (Global Open-source Technologies Conference): May 27-28th, Shanghai
  - Q2'23 EdgeX China meetup / Edge.AI developer & ecosystem summit: Jun 10th, Shanghai
- Miscellaneous
  - Welcome new partners joining EdgeX China community events: Lenovo, DaoCloud.
  - EdgeX is working closely with open-source AI project (such as OpenVINO) on Edge.AI reference architecture, including camera management, video ingestion, video analytics, etc.





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Other Topics

# Quick Summary: EdgeX 3.0 High Level Updates

Info transferred to EdgeX wiki release page: <https://wiki.edgexfoundry.org/display/FA/Minnesota>

Theme / Title	In Scope	Priority	T-Shirt	Breaking	Notes
Common Configuration - <b>DONE</b>	✓	High	L	✓	<a href="#">UCR</a> approved. <a href="#">ADR</a> approved, Implemented
URIs for Configuration - <b>Implementation now out of scope</b>	✓	High	M/L	-	<a href="#">UCR</a> approved. <a href="#">ADR</a> approved
Configuration Formats - <b>DONE</b> - <b>pending C Device Services / SDK</b>	✓	Med	L	✓	Issue <a href="#">here</a>
Microservice Authentication - <b>DONE</b>	✓	High	L	✓	<a href="#">UCR</a> approved, <a href="#">ADR</a> approved
Parent/Child Devices - <b>Now out of scope</b>	✓	Med	S/M	-	ADR not needed; Eaton to raise PR
Extending Device Data - <b>Now out of scope</b>	✓	Med	L	-	ADR required (Eaton)
Provision Watch via Device Metadata - <b>Now out of scope</b>	✓	Med	S/M	-	ADR not needed; Eaton to raise PR
Notification Service Improvements	Stretch	Low	S/M	-	
Core Data Retention	✓ (UCR)	Med	S/M	-	<a href="#">UCR</a> approved; ADR not needed. Impl with Core WG
Lowering the JSON Overhead	Stretch	Low	S/M	-	Need more customer stats (IOTech)
Replace Kong, Consul, Vault with Lighter Options - <b>Kong replaced as part of Microservice Auth</b>	Stretch	Med	L/XL	-	Kong being replaced as part of Microservice Authentication
EdgeX Lite	Stretch	Low	S	-	Incubation work

# UCR & ADR Review (as of 5/16/23)

<b>UCR/ADR Name</b>	<b>Status</b>	<b>Owner</b>	<b>Work Group</b>
<a href="#">BYO Vault</a>	UCR approve; working on ADR	Jim	Security
<a href="#">Microservice auth based on end-to-end-encryption</a>	ADR need to pave way for OpenZiti integration	Bryon	Security





# Document work (as of 5/16/23)

## Docs that should be done for Minnesota

#1062 M [Update ProvWatcher in Meta DD] (**new**)

#1057-2 L [Update migration guides] (**new**)

#1037 S [Grove link broken]

#1034 L [Connect to secure MQTT to commands] (**new**)

#1031 M [rework deployment page]

#1026 M [add common config to container names doc] (**done**)

#1024 S [fix text and links that reference older releases]

#985 - L [Document summary of data model changes in v3]

#956 - S [Device GPIO port doc]

#899/900 - L [why EdgeX security requirements are met]

#855 - L [extend Go SDK API docs]

#732 L [role based access for Mosquitto]

#714 L [images to LFS]

#667 L [how to build containers]

#642 L [export to cloud]

#489 M (with #121, #21) [consume/send binary]



# NanoMQ <https://nanomq.io/>

- EMQ (the company behind EdgeX rules engine eKuiper) have built a lightweight message broker called NanoMQ
  - Claimed to be extremely lightweight and very fast (compared to Mosquitto and HiveMQ)
  - Implements Sparkplug, includes an embedded rules engine, brokerless options
  - EMQ pushing to start another LF Edge open source project
  - Could/should EdgeX consider NanoMQ as an internal messaging option (alongside Redis Pub/Sub and Mosquitto)?
    - LF Edge community and support/maintenance benefits
    - Other thoughts?
- Update: EMQ presented at last week's architects meeting. Recording here: <https://wiki.edgexfoundry.org/display/FA/Architects%27+Meeting>  
Will be topic of discussion during Napa planning



# EdgeX TSC 2023-2024 - Current Status

- Current roles end 23rd June
- Disclaimer: all of the below are merely suggestions/ideas at this point
  - All roles are voted in under the meritocracy of EdgeX
  - A mixture of leadership continuity and new people is encouraged for the long term future of the project
  - Please contact James with other suggestions/nominations etc
- EdgeX Working Group Positions
  - Nominations so far:
    - App WG - Lenny (Intel) with support from Elizabeth Lee (Intel)
    - Core WG - Cloud and Melody Liu (both IOtech) co-chairs
    - Devices WG - Lindsey Cheng and Felix Ting (both IOtech) co-chairs
    - Security WG - open. Bryon stepping down
    - DevOps WG - Ernesto (Intel)
  - Outreach - open
- At-Large roles
  - Nominations so far
    - Farshid (Canonical)
    - Tom (Eaton)
    - James (IOtech)
    - Melvin Sun (Intel)
    - Elizabeth Lee (Intel)
- EdgeX roles
  - Nominations so far
    - TSC Chair - James
    - Product Manager - Lenny
    - Release Czar - Bill (Intel)





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Thank You